



Transforming education

How the education sector can be transformed through digital technology

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Education is one of the slowest sectors to take up digital technology. It remains largely structured to suit educationalists not students and is focused on early stage education – once in the adult world, education opportunities are limited. Digital technology can have a transformative impact including making education student-centred, providing better lifelong learning and widening access.

State of play

The industrial revolution and later waves of automation stimulated demand for more and better educated workers. This led to the introduction of largely state-funded universal education in most developed countries. It is a system that remains in place to the current day, with most education crammed into school years and, for some, universities. Training and education later in life is much less organised and, in many cases, non-existent.

People are less fortunate in most of the developing world where education standards are much lower. Good quality private schools are normally available, but only for a privileged few able to afford them. Public provision is generally available, but all too often teaching standards are low with low teacher wages, low morale and high absenteeism. Recently, low cost private providers have appeared, but are often discouraged by governments wanting to control the way people are educated.

In both developed and developing countries, education is based around institutions . schools, universities and colleges. Education is designed primarily around these institutions and the people that work there with little adaptation to the needs of individual students. Education after schools and universities is less well developed and comes from a mix of public and private providers and employers.

Changing needs

In developed countries, the way people are educated needs to change to keep up with rapid changes in society and technology. In the developing world, the challenge is more about upskilling the workforce to improve national prosperity and wellbeing. There are four main areas to address.

Life-long learning

Technology and working patterns are changing fast meaning that skills learned early in life can rapidly become obsolete. At the same time, working lives are becoming longer meaning that squeezing most education into the early years will not work anymore. There is a growing need for life-long learning to keep skills relevant.

High-level skills

Nowadays it is possible to access most human knowledge with a few clicks on a smartphone. In this situation, education should be less about facts and rote learning and more on higher-level skills such as analysis, problem solving and creativity.

Personalisation

The desirability of personalised education, where the curriculum and its delivery are adapted to the individual, has long been recognised. As an example, a well-known study by Bloom in 1984 showed that students receiving one-to-one attention performed 98% better than their peers. In the past, such an education was not practical for most learners, but now technology provides scope for educators to increase personalisation.

Greater access

In developed countries, there is a need to upskill the workforce as more jobs are either replaced by machines or outsourced to lower cost economies. In the developing world, the focus is more on providing good quality basic education for all. In both cases, there is a need to widen access to good education.

Doing things differently

Digital technology can help address these challenges in the form of education technology, otherwise known as edtech. However, this is only part of the story since, as with other sectors, digital transformation is about more than the technology itself. It extends to re-thinking the way education is delivered.

Schools and universities

For example, schools and universities are still mostly bricks and mortar organisations where students participate physically. In future, a more flexible approach is likely where physical attendance is combined with online and virtual education. This would make it possible to increase personalisation by, for example, customising learning styles to individual students and allocating online personal tutors. It would also make it possible provide wider access to more students without excessively increasing costs.

Mobius has been leading one initiative in this area focused on providing better education to more than 5m public school students in Saudi Arabia. This is being done by providing a mix of online lessons, one-to-one virtual tutoring and high quality content. The system will be provided to students outside school hours to lift standards in a country where public education ranks poorly against other countries.

There is also scope for digital technology to transform education in poorer developing countries. For example, Bridge International Academies, whose investors include Bill Gates and Mark

Zuckerberg, provides teachers with scripted lessons on tablets and backs this up remotely to maintain quality. Schools are being opened in India and several African countries, despite resistance from some governments who see this as competition to poorly performing public providers.

Interesting developments are also coming out of Silicon Valley where technology combined with fresh thinking is being used in several new schools. Key areas are personalising education and using more interactive and self-directed education methods to improve creativity and problem-solving skills. The internet giants are enthusiastic supporters of these new approaches which, in cases such as Summit Schools, are already spreading out into the US education system.

Meanwhile at university level, respected organisation such as Kaplan and BPP are already offering their own degree courses based on a mix of online and face-to-face delivery. At the moment, %online degrees+tend to have less credibility than those from traditional universities. But this is changing as leading providers become better established. In the meantime, some private providers are working in association with conventional universities who issue the resulting qualifications.

Education in later life

Digital transformation is also impacting education later in life. In the past, such education was mostly in the form of classroom based courses whether provided by employers, public colleges or private providers. Nowadays, there are many more options. At one time, MOOCs (massive open online courses) seemed to be the way forward. MOOCs involve pure online delivery and are widely available for everything from university degrees to bite-sized short courses. Although undoubtedly having a role to play, this type of training suffered from over-hyping when first introduced. Although uptake rates were high, experience showed the large majority of students dropped out.

Experience is that blended teaching works best in practice using a combination of online delivery, live virtual classes (where a tutor teaches a class remotely), virtual tutoring and perhaps some face-to-face conventional teaching. Meanwhile, developments are taking place in education content which now includes using games, simulations, video and suchlike to bring subjects to life. And in terms of delivery, students can now be offered a virtual experience as close as possible to the real thing for lessons, field trips, laboratory experiments and other areas.

Mobius is involved in developing and delivering a blended professional training experience. Training focuses bringing the best international tutors virtually into physical classrooms in the country using the latest technology to make the teaching experience as close as possible to conventional tutor-led classes. This has the advantage that the very best tutors can be used without the cost and delays of flying them into the country.

Corporates are increasingly using a mix of off-the-shelf and custom-developed digital training courses for their staff. Also, with more self-employment, individuals are starting to take responsibility for their own training. For example, General Assembly in the UK provides a career reboot for those wanting to enter the IT sector and, as part of the package, helps students get jobs once the training is complete.

Our view

Education has been one slower sectors to respond to the challenges and opportunities of the digital world. However, the pace of change is quickening and many new ideas and technologies are being developed around the world. This has led to a boom in financing for EdTech companies, expected to reach some \$250bn globally by 2020. There are two factors at work:

1. The need to change in the way people are educated due to the digital revolution . for example the need for life-long learning to keep skills relevant in a fast-changing world
2. The fact that the very digital technologies driving the need for change can also provide the solution . for example through personalised education.